

CLAIM AMENDMENTS

1. (Amended). A process for treating meat, comprising:

providing an animal having respiratory and circulatory systems for said meat;

introducing; a treatment gas ;

Introducing said treatment gas through said animal's respiratory and circulatory systems into said meat until; said treatment gas preserves said meat.

2. (Amended). A process for treating meat, comprising:

providing a live animal;

treatment fluid;

causing said live animal ~~inhales said to inhale~~ a treatment fluid, whereby; said treatment fluid diffuses into the blood of said live animal, until; said treatment fluid preserves said meat.

3. (Amended). A process for treating edible meat, comprising:

providing a meat bearing animal having a;

~~fluid containing smoke gas is exposed to the respiratory system respiration into blood~~ of said animal;

exposing said respiratory system to a fluid containing gaseous smoke;

diffusing a compound in said gaseous smoke ~~an element of said smoke gas~~ diffuses through the said respiratory system into the blood of said animal and, whereby said compound flows into said meat;

whereby said gaseous smoke gas preserves said edible meat.

4. (Amended). A process for treating meat, comprising:

providing a live animal having a circulatory system;

dissolving a treatment gas into a liquid to form a;

~~said dissolved treatment gas is introduced to;~~

introducing said dissolved treatment gas into the circulatory system and circulated
circulating said dissolved treatment gas throughout said animal;
whereby said treatment dissolved gas preserves said meat for food.

5. (Amended). A process for treating meat of an animal having a circulatory system,
comprising:

~~solvent;~~

dissolving a gas solute into a;

~~said gas is dissolved in said solvent and~~ forming a solution;

applying said solution is applied to the said circulatory system of an said animal;
obtaining a treatment effect ~~to~~ on said meat of said animal.

6. (Amended). A process according to claim 1, wherein further comprising freezing said
animal ~~is frozen~~ whole.

7. (Amended). A process according to claim 1, wherein further comprising freezing said
meat ~~is frozen~~.

8. (Amended). A process according to claim 1, wherein said providing step is performed
with an animal having blood that contains hemoglobin, and wherein said
introducing step is performed using a gas that further comprising:
~~said gas contains carbon monoxide;~~

whereby said carbon monoxide diffuses into the blood of said animal and binds
with said hemoglobin, forming COHb;
said blood containing COHb flows through the circulatory system into
said meat and COMb is formed;

9. (Amended). A process according to claim 1, further comprising:
performing said introducing step until said gas kills or sedates said animal for harvesting.

10. (Amended). A process according to claim 1, wherein said animal is introducing step
is performed using an animal comprising seafood.

11. (Amended). A process according to claim 1, wherein said animal is introducing step
is performed using an animal comprising fish.

12. (Canceled).

13. (Amended). A process according to claim 11, wherein said fish is selected from the
group consisting of salmon, tuna, or tilapia.

14. (Amended). A process according to claim 1, wherein said providing step is
performed with an animal that further comprising:

said animal has gills and wherein; said animal ventilates water through said gills.

15. (Canceled).

16. (Canceled).

17. (Amended). A process according to claim 1, wherein said preservation introducing
step is applied by mass-treatment of groups of said animals.

18. (Amended). A process according to claim 1, further comprising: said wherein
said introducing step is performed using gas is derived from raw smoke; and wherein water and
animal said animal's membranes act to super-purify said smoke preventing smoke flavor from
being imparted to said meat.

19. (Canceled).

20. (Amended). A process according to claim 1, wherein said introducing step is
performed by pumping said further comprising:
said gas is pumped through said circulatory system by a heart;
further comprising bleeding said animal begins before said heart stops pumping.

21. (Canceled).
22. (Canceled).
23. (Canceled).
24. (Amended). A process according to claim 14, wherein said introducing step is performed by entraining said further comprising:
~~said gas is entrained in water, whereby;~~ a portion of said entrained gas is dissolved in said water, and whereby; said water inspires during said ventilating.
25. (Amended). A process according to claim 14, wherein said introducing step is performed by contacting further comprising: a gas solute and; a liquid solvent ;
~~said gas solute and said liquid solvent are in contact at a pressure above one atmosphere,~~
whereby; said gas solute dissolves in said liquid solvent forming a solution; and
applying said solution is applied to said gills.
26. (Canceled).
27. (Canceled).
28. (Amended). A process according to claim 14, wherein said introducing step is performed by causing said animal to inspire further comprising:
~~said animal inspires~~ water containing concentrations greater than 80 nl of carbon monoxide per liter of said inspired water.
29. (Amended). A process according to claim 8, wherein said introducing step is performed until further comprising: blood of said animal contains COHb concentration ranging between approximately 5% and 100%.
30. (Amended). A process according to claim 14, wherein said introducing step is performed by causing said animal to inspire further comprising:

~~said animal inspires~~ water containing carbon monoxide for a duration ranging from approximately a few seconds to several hours.

31. (Amended). A process according to claim 14, wherein said introducing step is performed by causing said animal to inspire further comprising:

~~said animal inspires~~ water containing carbon monoxide for a duration ranging from approximately 1.5 minutes to 1 hour.

32. (Amended). A process according to claim 14, wherein said providing step is performed using an 28, further comprising:

~~said~~ animal containing blood;

wherein said introducing step is performed by diffusing said carbon monoxide diffuses from said inspired water into said blood and, whereby COHb concentration increases;

subsequently, causing said animal inspires to inspire water with less than 80 nl of carbon monoxide per liter;

whereby said carbon monoxide diffuses from said blood into said inspired water with less than 80 nl of carbon monoxide and said COHb concentration decreases.

33. (Canceled).

34. (Canceled).

35. (Canceled).

36. (Amended). A process according to claim 11, wherein said introducing step is performed using a gas containing further comprising:

said gas contains carbon monoxide to create:

said treated fish meat is fish having carbon monoxide concentrations ranging from between approximately 1.1 to 20 times the quantity of carbon monoxide in untreated fish meat.

37. (Amended). A process according to claim 11, wherein said introducing step is performed using a gas that further comprising:

~~said gas~~ includes carbon monoxide to create;

said treated fish meat having carbon monoxide concentrations ranging from between approximately 1.1 to 80 times the quantity of carbon monoxide in untreated fish meat.

38. (Canceled).

39. (Amended). A process according to claim 14, wherein said introducing step is performed by dissolving further comprising: carbon monoxide dissolved in respirable water;

causing said animal ventilates to ventilate said respirable water producing COHb;

regulating intensity of treatment and carbon monoxide content in said meat is regulated by varying said carbon monoxide concentration in said respirable water; and;

varying said ventilation time.

40. (Amended). A process according to claim 8, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is a fish;

~~said~~

wherein said introducing step is performed by dissolving said gas is dissolved in a liquid solution and inspired by said fish;

wherein said inspired solution contains sufficiently high concentrations of carbon monoxide to cause approximately 100% COHb production for the total volume of blood passing through the gills during ventilation;

wherein time of said ventilation multiplied by cardiac output determines total milliliters COHb per kilogram of body weight;

wherein said total milliliters COHb per kilogram of body weight produced divided by total Hb per kilogram of body weight, equals average COHb saturation;

~~maximum saturation is 100% COHb.~~

41. (Amended). A process according to claim 8, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is fish;

wherein said introducing step is performed until carbon monoxide concentration in said treated meat ~~range~~ ranges from between approximately 1.1 to 3.99 times carbon monoxide concentration in untreated meat.

42. (Amended). A process according to claim 8, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is fish;

wherein said introducing step is performed until carbon monoxide concentration in said treated meat ~~range~~ ranges from between approximately 4 to 9.99 times carbon monoxide concentration in untreated meat.

43. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is a tuna ventilating;

wherein said introducing step is performed by causing said tuna to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of said tuna meat ranges from between approximately 22 µg/kg to 957 µg/kg.

44. (Amended). A process according to claim 1, wherein said providing step is

performed using an animal that further comprising:

~~said animal~~ is a tuna ventilating;

wherein said introducing step is performed by causing said tuna to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tuna range from between approximately 44 µg/kg to 399 µg/kg.

45. (Amended). A process according to claim 1, wherein said providing step is

performed using an animal that further comprising:

~~said animal~~ is a tuna ventilating;

wherein said introducing step is performed by causing said tuna to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tuna range from between approximately 80 µg/kg to 2,397 µg/kg.

46. (Amended). A process according to claim 1, wherein said providing step is

performed using an animal that further comprising:

~~said animal~~ is a tuna ventilating;

wherein said introducing step is performed by causing said tuna to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tuna range from between approximately 160 µg/kg to 999 µg/kg.

47. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:
~~said animal~~ is a tuna ventilating:
wherein said introducing step is performed by causing said tuna to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tuna range from between approximately 200 µg/kg to 4,800 µg/kg.
48. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:
~~said animal~~ is a tuna ventilating:
wherein said introducing step is performed by causing said tuna to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tuna range from between approximately 400 µg/kg to 2,000 µg/kg.
49. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:
~~said animal~~ is a tilapia ventilating:
wherein said introducing step is performed by causing said tilapia to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tilapia range from between approximately 6.6 µg/kg to 60 µg/kg.
50. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:
~~said animal~~ is a tilapia ventilating:

wherein said introducing step is performed by causing said tilapia to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tilapia range from between approximately 7.7 µg/kg to 40 µg/kg.

51. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:

said animal is a tilapia ventilating:

wherein said introducing step is performed by causing said tilapia to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tilapia range from between approximately 24 µg/kg to 150 µg/kg.

52. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:

said animal is a tilapia ventilating:

wherein said introducing step is performed by causing said tilapia to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tilapia range from between approximately 28 µg/kg to 99.9 µg/kg.

53. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:

said animal is a tilapia ventilating:

wherein said introducing step is performed by causing said tilapia to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tilapia range from between approximately 60 µ/kg to 300 µg/kg.

54. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is a tilapia ventilating;

wherein said introducing step is performed by causing said tilapia to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tilapia range from between approximately 70 µg/kg to 200 µ /kg.

55. (Amended). A process according to claim 1, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is a tilapia ventilating;

wherein said introducing step is performed by causing said tilapia to ventilate a fluid containing carbon monoxide until; carbon monoxide concentration of the flesh of said tilapia range from between approximately 300 µg/kg to 1,200µg /kg.

56. (Canceled).

57. (Canceled).

58. (Canceled).

59. (Amended). A process according to claim 14, wherein said introducing step is performed using further comprising:

~~said gas is~~ carbon monoxide dissolved in ~~said~~ water, and;

~~said~~ carbon monoxide gill absorption/kg = 18.35 mlCO/min/kg.

60. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is a tuna;

~~said gas is~~

wherein said introducing step is performed using carbon monoxide dissolved in ~~said~~ water until:

said tuna tissue ranges from approximately 22 to 957 µg CO/kg;

~~said tuna tissue ranges from approximately 018 to .766 mlCO/kg;~~

said tuna blood ranges from approximately 2.07 to 4.94 mlCO/kg.

61. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is a tuna;

~~said gas is introducing step is performed using~~ carbon monoxide dissolved in ~~said water until~~;

said tuna tissue ranges from approximately 44 to 399 µg CO/kg;

~~said tuna tissue ranges from approximately .035 to .319 mlCO/kg;~~

said tuna blood ranges from approximately 2.07 to 3.99 mlCO/kg.

62. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is a tuna;

~~said gas is~~

wherein said introducing step is performed using carbon monoxide dissolved in ~~said water until~~;

said tuna tissue ranges from approximately 80 to 2,397 µg CO/kg;

~~said tuna tissue ranges from approximately .064 to 1.919 mlCO/kg;~~

said tuna blood ranges from approximately 7.34 to 12.36 mlCO/kg.

63. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is a tuna;

~~said gas is~~

wherein said introducing step is performed using carbon monoxide dissolved in
said water until:;

 said tuna tissue ranges from approximately 160 to 399 µg CO/kg;

~~said tuna tissue ranges from approximately .128 to .800 mlCO/kg;~~

 said tuna blood ranges from approximately 7.34 to 9.97 mlCO/kg.

64. (Amended). A process according to claim 14, wherein said providing step is
performed using an animal that further comprising:

~~said animal-~~ is a tuna;

~~said gas is~~

wherein said introducing step is performed using carbon monoxide dissolved in
said water until:;

 said tuna tissue ranges from approximately 200 to 4,800 µg CO/kg;

~~said tuna tissue ranges from approximately .160 to 3.840 mlCO/kg;~~

 said tuna blood ranges from approximately 18.34 to 24.72 mlCO/kg.

65. (Amended). A process according to claim 14, wherein said providing step is
performed using an animal that further comprising:

~~said animal-~~ is a tuna;

~~said gas is~~

wherein said introducing step is performed using carbon monoxide dissolved in
said water until:;

 said tuna tissue ranges from approximately 400 to 2,000 µg CO/kg;

~~said tuna tissue ranges from approximately .320 to 1.601 mlCO/kg;~~

said tuna blood ranges from approximately 18.34 to 19.94 mlCO/kg.

66. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

said animal is a tilapia;

said gas is

wherein said introducing step is performed using carbon monoxide dissolved in
said water until:

said tilapia tissue ranges from approximately 6.6 to 60 µg CO/kg;

~~said tilapia tissue ranges from approximately .005 to .048 mlCO/kg;~~

said tilapia blood ranges from approximately .18 to .86 mlCO/kg.

67. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

said animal is a tilapia;

said gas is

wherein said introducing step is performed using carbon monoxide dissolved in
said water until:

said tilapia tissue ranges from approximately 7.7 to 40 µg CO/kg;

~~said tilapia tissue ranges from approximately .006 to .032 mlCO/kg;~~

said tilapia blood ranges from approximately .18 to .53 mlCO/kg.

68. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

said animal is a tilapia;

said gas is

wherein said introducing step is performed using carbon monoxide dissolved in said water until:;

 said tilapia tissue ranges from approximately 2.4 to 150 µg CO/kg;

said tilapia tissue ranges from approximately .019 to .120 mlCO/kg;

 said tilapia blood ranges from approximately .44 to 2.10 mlCO/kg.

69. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

said animal is a tilapia;

said gas is

wherein said introducing step is performed using carbon monoxide dissolved in said water until:;

 said tilapia tissue ranges from approximately 2.8 to 100 µg CO/kg;

said tilapia tissue ranges from approximately .022 to .080 mlCO/kg;

 said tilapia blood ranges from approximately .44 to 1.31 mlCO/kg.

70. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

said animal is a tilapia;

said gas is

wherein said introducing step is performed using carbon monoxide dissolved in said water until:;

 said tilapia tissue ranges from approximately 60 to 1,200 µg CO/kg;

said tilapia tissue ranges from approximately .048 to .961 mlCO/kg;

 said tilapia blood ranges from approximately 3.20 to 15.11 mlCO/kg.

71. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

said animal- is a tilapia;

said gas is

wherein said introducing step is performed using carbon monoxide dissolved in said water until:;

 said tilapia tissue ranges from approximately 70 to 200 µg CO/kg;

said tilapia tissue ranges from approximately .056 to .160 mlCO/kg;

 said tilapia blood ranges from approximately 3.20 to 9.41 mlCO/kg.

72. (Amended). A process according to claim 8, wherein said providing step is performed using an animal that further comprising:

said animal- is a tuna;

wherein said introducing step is performed until the ratio of COHb to COMb in said tuna ranges from approximately 5:1 to 153:1.

73. (Amended). A process according to claim 8, wherein said providing step is performed using an animal that further comprising:

said animal- is a yellowfin fish;tuna;

wherein said introducing step is performed until the ratio of COHb to COMb in said yellowfin tuna ranges from approximately 11:1 to 68:1.

74. (Amended). A process according to claim 8, wherein said providing step is performed using an animal that further comprising:

said animal- is a tilapia;

wherein said introducing step is performed until the ratio of COHb to COMb in said tilapia ranges from approximately 11:1 to 67:1.

75. (Amended). A process according to claim 8, wherein said providing step is performed using further comprising:

~~said animal is-~~ a tuna;

wherein said introducing step is performed until the ratio of COHb to COMb in said tuna averages approximately 9.9:1.

76. (Amended). A process according to claim 8, wherein said providing step is performed with an animal that further comprising:

~~said animal-~~ is a yellowfin fish;~~tuna~~;

wherein said introducing step is performed until the ratio of COHb to COMb in said yellowfin tuna averages approximately 18.7:1.

77. (Amended). A process according to claim 8, wherein said providing step is performed using an animal that further comprising:

~~said animal-~~ is a tilapia;

wherein said introducing step is performed until the ratio of COHb to COMb in said tilapia averages approximately 9.9:1.

78. (Amended). A process according to claim 14, wherein said introducing step is performed for a further comprising: minimum treatment time is of 8 seconds.

79. (Amended). A process according to claim 14, wherein said introducing step is performed for a further comprising: minimum treatment time is of 14 seconds.

80. (Canceled).

81. (Amended). A process according to claim 11, ~~further comprising wherein said introducing step is performed until:~~

CO gill absorption/kg = 18.34 mlCO/min/kg.

82. (Amended). A process according to claim 1, ~~further comprising wherein said introducing step is performed until:~~

said treated meat replicates natural coloration and subsequent discoloration of untreated meat.

83. (Cancelled).

84. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that ~~further comprising:~~

~~said animal~~ is tuna;

~~said~~

wherein said introducing step is performed using ventilated water that contains no less than .092 mlCO/liter H₂O.

85. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that ~~further comprising:~~

~~said animal~~ is tuna;

~~said~~

wherein said introducing step is performed using ventilated water that contains no less than .882 mlCO/liter H₂O.

86. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that ~~further comprising:~~

~~said animal~~ is tuna;

~~said~~

wherein said introducing step is performed using ventilated water that contains no less than 2.646 mlCO/liter H₂O.

87. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is tilapia;

~~said~~

wherein said introducing step is performed using ventilated water that contains no less than .008 mlCO/liter H₂O.

88. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is tilapia;

~~said~~

wherein said introducing step is performed using ventilated water that contains no less than .176 mlCO/liter H₂O.

89. (Amended). A process according to claim 14, wherein said providing step is performed using an animal that further comprising:

~~said animal~~ is tilapia;

~~said~~

wherein said introducing step is performed using ventilated water that contains no less than 1.408 mlCO/liter H₂O.

90. (Canceled).

91. (Canceled).

92. (Canceled).

93. (New) A process for treating meat of live salmon having a respiratory and circulatory system, said meat having a normal carbon monoxide concentration, comprising:
entraining a treatment gas containing carbon monoxide in water that contains said live salmon;

exposing said salmon to said treatment gas containing carbon monoxide to cause said treatment gas to be naturally respired by said salmon through said respiratory system and to be circulated to said meat through said circulatory system until said meat has a treated carbon monoxide concentration that is greater than said normal carbon monoxide concentration; and

freezing said meat for storage to create treated meat that, after thawing, substantially replicates natural coloration and subsequent discoloration of untreated meat.

94. (New) A process for treating live salmon having mouth, gills, meat, a respiratory system, and a circulatory system, said meat having a normal carbon monoxide concentration, comprising:

mixing a treatment gas containing carbon monoxide into water that contains said salmon;
exposing said salmon to said treatment gas to cause said treatment gas to be respired by said salmon through said respiratory system and to be circulated to said meat through said circulatory system;

wherein subsequent to said exposing step said meat has a treated carbon monoxide concentration;

wherein said treated carbon monoxide concentration is greater than said normal carbon monoxide concentration; and

freezing said meat for storage to create treated meat;

wherein said exposing step is performed for a treatment time sufficiently long that, after thawing, said treated meat substantially replicates natural coloration and subsequent discoloration of untreated meat.

95. (New) A process according to claim 94, wherein said exposing step is carried out for approximately between 10 seconds and 30 minutes.

96. (New) A process according to claim 94, wherein said exposing step is carried out until said salmon is dead.

97. (New) A process according to any one of claims 93 to 94, wherein said treatment gas is tasteless smoke.

98. (New) A process according to any one of claims 93 to 94, wherein said freezing step is carried out at a temperature of at most approximately -20 degrees Fahrenheit (-29 degrees Centigrade).

99. (New) A process according to any one of claims 93 to 94, wherein said exposing step is carried out until a desired preservative treatment effect is achieved.

100. (New) A process for treating live salmon having meat, a respiratory system, and a circulatory system, said meat having a normal carbon monoxide concentration, comprising:

bubbling a treatment gas containing carbon monoxide through water containing said salmon;

exposing said salmon to said treatment gas to cause said treatment gas to be respired by said animal through said respiratory system and to be circulated to said meat through said circulatory system until said meat has a treated carbon monoxide concentration that is greater than said normal carbon monoxide concentration; and

freezing said meat for storage to create treated meat that, after thawing, substantially replicates natural coloration and subsequent discoloration of untreated meat.

101. (New) A process according to claim 106, wherein said treatment gas is tasteless smoke.

102. (New). A process for treating with a treatment element the meat of live salmon having a respiratory and circulatory system, comprising:

introducing said treatment element into water that contains said live salmon;

exposing said salmon to said treatment element to cause said treatment element to be naturally respired by said salmon through said respiratory system and to be circulated to said meat through said circulatory system until said meat has a concentration of said treatment element that is great enough to achieve desired preservative treatment effects; and

freezing said meat for storage to create treated meat that, after thawing, substantially replicates natural coloration and subsequent discoloration of untreated meat.